



MODULE OWNERS MANUAL

Power Processing Modules

About Power Processing Modules

The rear panel of the CK family Power Processing amplifiers provides three bays (Input, Network and Power/Output) configured to accept interchangeable plug-in modules. Your amplifier may have been factory-configured with some of the optional modules. The back page of this manual contains an overview chart of all currently available Power Processing modules.

“CC-” Modules fit into the Power/Output or Input module bays. These basic analog modules are non-programmable and non-NexSys® compatible; only the Sequential Turn-On/Off (STO) function can be controlled (through hardwiring).

“NC-” Modules can be controlled, programmed and/or monitored via the hand-held N-Coder, N-Coder/PC software or over the NexSys network. Except for the STO feature, NC Modules are “tamper-proof” in that there are no user-accessible setup controls.

Programming NC Input Processing Modules

NC Input Processing modules can be programmed in OR out of the amplifier.

Programming with the N-Coder

Connected to an Input Processing module’s data port via the supplied RJ14-RJ14 cable, N-Coder automatically identifies module type and displays only the parameters available for that module. Users can then adjust parameters, audition the results, then store new settings in the module’s non-volatile memory, or inside the N-Coder for later reference. Modules need not be powered, or even installed in the amplifier for programming; N-Coder provides the necessary power. Parameters can also be created ahead of time without any modules attached, stored in the N-Coder, then downloaded into the module’s memory later. Except for DSP modules, all NC Input Processing modules can be programmed from an N-Coder.

Programming with N-Coder/PC software

N-Coder/PC Software, a Windows®-based program that configures all Input Processor NC modules, will run on any PC with Windows ‘95 or 3.1. The computer’s parallel (printer) port is used with a DB25 to RJ-14 adapter and cable (both supplied) that connects to the Input Processor NC module.

Programming with Octopus

Crest Audio’s LCP-AC8 “Octopus” is a one rack space, Locally Controlled Processor that adds ‘Snapshot’ capability to the CK family of Power Processing amplifiers. Octopus is compatible with all NC Input Processing modules, and can activate functions including sequential power control, level attenuation, analog EQ, crossovers, and all DSP parameters. The Octopus may be integrated with third-party RS-232C system controllers.

Programming with NexSys

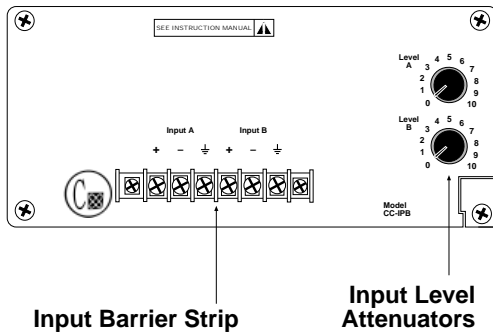
Using the appropriate NC Network module, NC Input and Power/Output modules can be controlled, programmed and/or monitored remotely through the use of NexSys. NexSys is Crest Audio’s hardware and software package that offers network connection of Crest Audio amplifiers and associated devices, along with diagnostic facilities.

Input Processing Module Connections

The CK family of amplifiers come standard with a CC-IPB Input module. Barrier strip input connectors and removable individual channel rotary attenuators are provided. All Input modules have an internal voltage gain/input sensitivity jumper that is factory-set for X40 gain.

Input barrier strip lug / gauge information

Input barrier strips have a 0.325" (8.3mm) center and 0.270" (6.9mm) lug space. For connecting to the input barrier strips, a wire gauge between 14 AWG (2.5mm²) & 24 AWG (0.25mm²), and spade lugs (Panduit Part No. PNF 18-6LF-C or equivalent) are recommended.



Balanced vs. unbalanced inputs

Barrier strip inputs are ready to accept balanced signals. For use with an unbalanced source, tie the inverting (minus) input to ground by installing a jumper across the appropriate barrier strip terminals. If the inverting input is left floating, a 6 dB loss in gain will result.

AES/EBU Input

This XLR jack accepts a standard AES/EBU XLR plug.

Daisy chaining

Some Input Processing modules have daisy-chained outputs, located on barrier strip terminals.

NC-AES and NC-DSP-D modules have balanced daisy chain outputs.

NC-DSP-A and NC-SEQ modules have unbalanced daisy chain outputs.

NC-MCO and NC-MEQ modules have unbalanced mono HP/LP daisy chain outputs.

The NC-SCO module has unbalanced stereo HP/LP daisy chain outputs.

Input Processing Module Attenuators

Operation

Channel attenuators (A&B) are used to control signal level. Ideally, the amplifier should be operated with the controls at 0dB attenuation. When the amplifier is being used in bridged mono mode, both attenuators must at the same level.

Knob Removal

The attenuator knobs can be removed and replaced with blanking plugs.

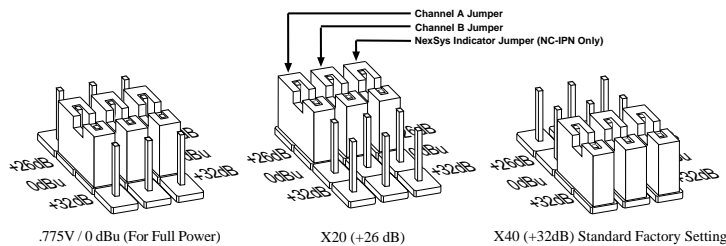
The procedure for attenuator knob removal is as follows:

1. With an X-Acto or similar knife, pop off the grey key cap of the attenuator knob. This will reveal the inside nut.
2. Using needle nose pliers or appropriate size nut driver, loosen and remove the inside nut.
3. Slide the attenuator knob off the shaft.
4. Insert a regular screwdriver in the slotted end of the shaft, and adjust attenuation to desired level.
5. Blanking plugs may now be inserted in the attenuator holes.

Input Processing Modules - Internal Options

Input sensitivity/voltage gain jumper

Input modules have user-settable jumpers to configure Input Gain/Sensitivity. These internal jumpers (two for CC-IPB, three for all input NC modules), labeled “W1 W2 W3”, are used to set the overall gain of the amplifier.

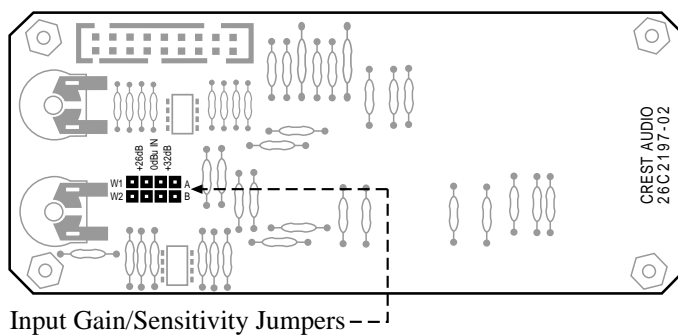


The 3 positions (shown at left) allow the amplifier to be set for constant gain of X20 (26 dB), X40 (32 dB), OR constant sensitivity for full output (.775V) at 0 dBu input. The standard factory setting is for X40 (32dB). All jumpers must be set to the same position as shown.

To change jumper settings, the Input module must first be removed from the amplifier.



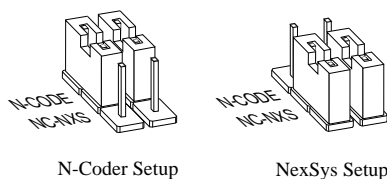
Warning! Amplifier must be removed from AC mains supply before this operation is undertaken!



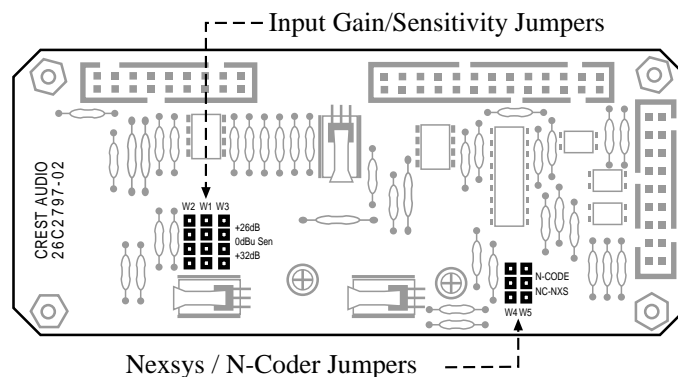
The diagram at left shows the location of these jumpers on the CC-IPB module. The diagram at the lower right shows the location of the jumpers on the NC-IPN module.

NexSys/N-Coder jumper

All NC Modules have internal jumpers used to set the module for operation with NexSys or N-Coder. These jumpers are labeled “W4 W5” on the Input module circuit board.



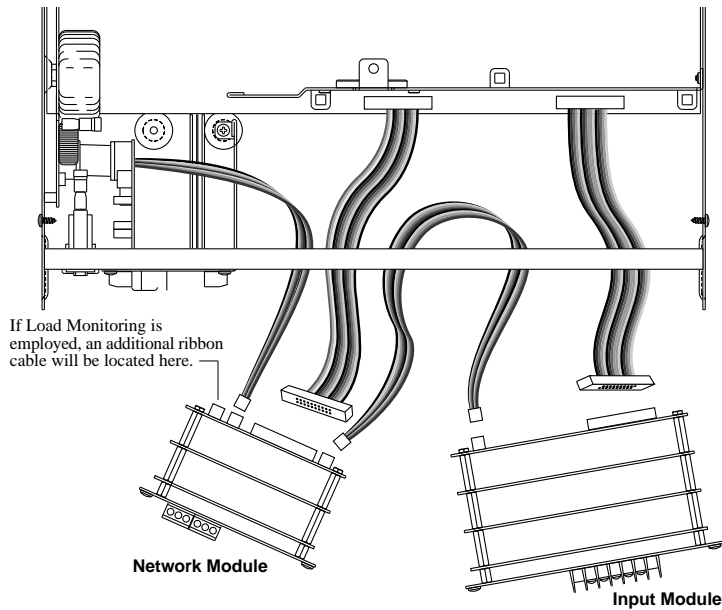
The “NC-NXS” jumper position allows operation with NexSys, while the “NCODE” jumper position permits the Input module to be programmed through N-Coder or N-Coder/PC software when the amplifier is off.



Note: Factory setting is the ‘NexSys’ position. If NexSys, N-Coder, or N-Coder/PC software is not being used, jumper position will have no effect upon the operation of the amplifier.

Swapping out Modules

Only jumper setting changes or module upgrades require modules to be removed from the amplifier. Contact Crest Audio Customer Service for full details on module removal. The 'General Module Setup' diagram indicates the general setup of the rear panel module/bay configuration.



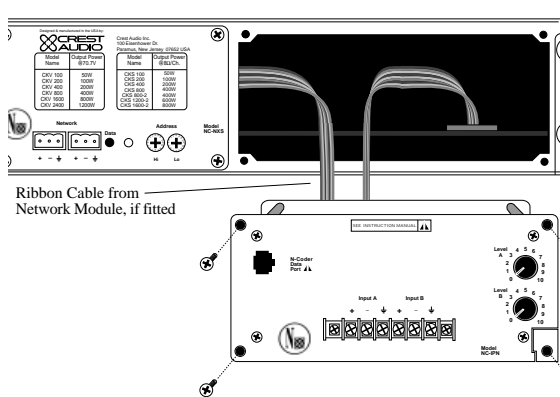
Required Tools

A Phillips screw driver. Should the module jumpers need to be changed or removed, a pair of long nose or needle nose pliers is also useful.



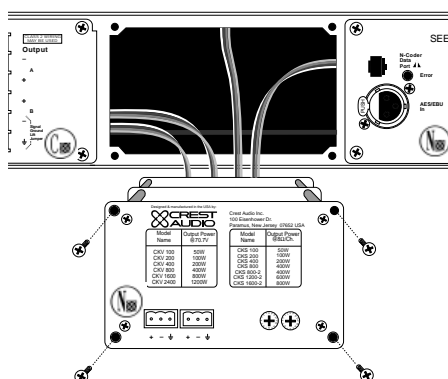
Precautions

Amplifier is shown with the top cut away for clarity only. Dangerous voltages exist inside, and only a Crest Audio-certified service technician should remove the top cover! Removable modules contain static-sensitive devices; handle modules at static-safe work stations! The amplifier MUST be switched off and the mains plug removed from the supply before module removal operation is undertaken.



Removing or Replacing an Input Module.

Remove the four #8 3/8" Phillips pan head sheet metal screws that secure the module to the chassis. The module is connected electrically to the amplifier via multi-pin ribbon cables. Unplugging the module from the ribbon cable connectors frees the module for removal. To insert the same or another module, simply reverse this procedure, making sure that any ribbon cable connectors are properly and securely seated. *Note: The amplifier must not be operated without an Input module in place.*



Removing or Replacing a Network Module.

This process is the same as that for removing/replacing an Input module. Be aware, though, that if an NC-NXS Network module is being removed or replaced, four multi-pin ribbon cables will need to be disconnected. *Note: Standard CK family amplifiers come with a blank panel installed in the Network bay. The amplifier must not be operated without a Network module or blank panel in place.*



DO NOT attempt to replace or remove a Power/Output Module. This module can only be serviced by a Crest Audio certified service technician. Please consult your dealer, Crest Audio representative, or Crest Audio Customer Service for assistance. User-inflicted damage to this module will invalidate your warranty.

Storing Unused Modules



Power Processing modules contain static-sensitive devices; therefore unused modules must be stored in a static-safe environment, preferably at normal room temperature!

Network Module Information

The CC-BLK (blank panel) comes standard with all amplifiers.

When a Network module (NC-NXS) is installed in this bay, network connection is made via a pair of three-pin Phoenix-type connectors. They are wired in parallel, and form a loop-through connection. (Mates for these connectors are shipped with the Network module.) Network bus addressing is accomplished through use of the Hi and Lo Address dials. *See the NexSys Software manual for more information on NexSys bus connection and configuration.*

Power/Output Module Speaker Connections

Speakers are connected using the Output Barrier Strip connectors. Spade lugs, ring tongues or bare wire may be connected to the output barrier strip elements. Spade Lug measurements for Output barrier strip are as follows: .44" (11mm) screw spacing, .32" (8mm) lug space. For output spade lugs, Panduit Part No. PNF 14-8LF-C (or equivalent) is recommended. Make sure the amplifier is turned off before you change any output connections or jumpers. Also ensure that the load impedance being connected is not less than the amplifier's ability to drive it. *See the CK family Power Processing Amplifier Manual for more information on speaker connection.*

Service Information

For service, contact your nearest Crest Audio Service Center, Distributor, Dealer, or Crest Audio Inc. Customer Service directly at: Tel. 201.909.8700 (USA) Fax. 201.909.8744 (USA). For technical inquiries only, the Crest Audio Technical Services Dept. can be faxed at 201.587.0550 (USA). Crest Audio may also be contacted on the World Wide Web at: <http://www.crestaudio.com>.

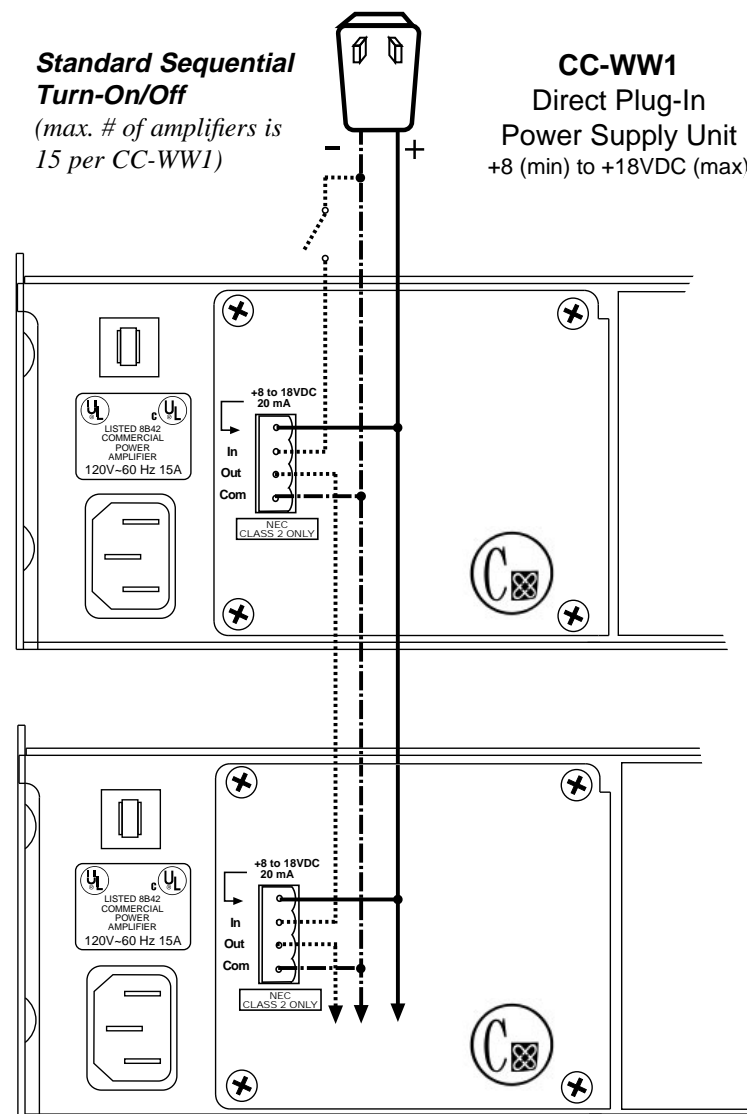
Sequential Turn-On/Off Connections

CK family amplifiers come standard with the CC-STL Sequential Turn-On/Turn-Off (STO) Output/Power module installed. On this module, a four-pin Sequential Turn-On/Turn-Off (STO) connector is supplied. A mating connector is shipped with the amplifier. With the amplifier front power switch set to “remote”, a voltage of between +8 to +18 VDC can be applied across the “Com” and “+8 to +18V” terminals. When the voltage is on/available, a closure between the “In” and “Com” terminals will turn the amplifier on. Additional amplifiers are added to the turn-on chain by looping from the “Out” terminal of one amplifier into the “In” terminal of the next amplifier.

Standard Sequential Turn-On/Turn-Off.

For CK family amplifier systems configured for basic non-NexSys applications, (CC-IPB with CC-STL) an external power supply is needed to provide a nominal +8 to +18 Volts to each STL module. The number of CC-STL modules that an external DC supply will be able to power is dependent on the power supply’s voltage output and current capability. Crest Audio’s external Direct Plug-In Power Supply Unit (CC-WW1) supplies 9 volts at 300 milliamps and can power 15 CC-STL modules. Use only a two-wire power supply! If your configuration requires the STO control of more than 15 amplifiers, contact Crest Audio Customer Service for more information. (Note that module CC-SDC has an integral STO power supply, and does not require CC-WW1).

The “Com” and “+8 to +18V” terminals on each CK family amplifier are bussed together in parallel and connected to the DC supply. The “Out” terminal of each CK amplifier is connected to the “In”



terminal of the next CK amplifier in the turn-on sequence. The first amplifier in the chain requires an SPST closure between its “In” terminal and “Com” terminal to initiate the power turn-on sequence and keep the amplifiers in the chain powered on.

Turn-on delay time between amplifiers fitted with basic modules (i.e., CC-STL) is approximately 100ms, turn-off delay time is 200ms.

Manual or NexSys-Compatible Sequential Turn-On/Turn-Off.

CK family amplifiers fitted with a NexSys-compatible NC Power/Output Module (NC-STI, NC-SAC, NC-SLM) may be powered up via NexSys OR with a manual switch closure. If NexSys is employed, the STO delay time is also software-controllable.

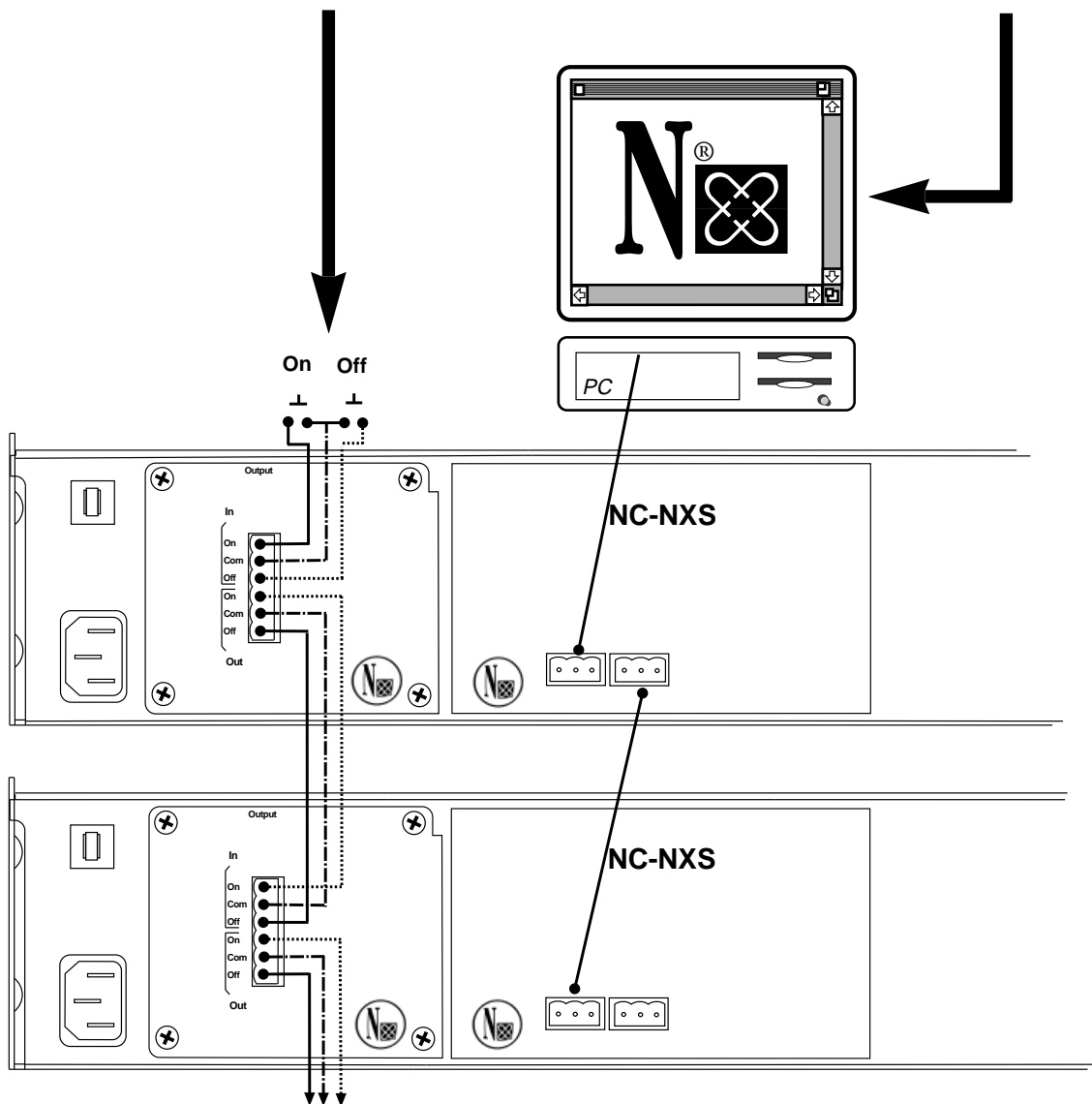


Note: when using NexSys control, hard-wiring for manual switch closure between amplifiers should be used cautiously. If the switch closure output is wired up, it WILL cause the next amp to switch, regardless of which source (hardware switch or NexSys STO) has initiated the command.

The modules (and the non-NexSys compatible CC-SIO) feature a 6-pin connector providing a 3-wire input from switch closures (or from a CK family amplifier) and an opto-isolated 3-wire output to another CK amplifier. The 3-wire signals are: ON, OFF, and COM. To initiate either the ON or OFF function manually, simply provide a closure from the proper signal line to COM; after a time delay of approximately 200ms, the closure is echoed on the 3 isolated output signal pins to initiate the turn-on function in 'downstream' amplifiers. The on/off closures can be either momentary or constant contact.

Manually Initiated (hard-wired) Sequential Turn-On/Off using NexSys-compatible Power/Output Modules

NexSys-Initiated Sequential Turn-On/Off using NexSys-compatible Power/ Output Modules (unlimited # of amplifiers)



Power Processing Modules - Overview

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Input Processing Modules		Input Connection	Daisy Chain Out	Programmable	Module Functions
CC-IPB		B	N/A	N	Gain Control
NC-AES		A	BS	Y	Gain Control
NC-DSP-A		B	UBS	Y	Analog Input DSP
NC-DSP-D		A	BS	Y	Digital Input DSP
NC-IPE		B	N/A	Y	Gain Control, Priority Page
NC-IPN		B	N/A	Y	Gain Control
NC-MCO		B	MXO	Y	Gain Control, 2-way Xover
NC-MEQ		B	MXO	Y	Gain Control, Mono EQ/2-way Xover
NC-SCO		B	SXO	Y	Gain Control, Stereo Xover
NC-SEQ		B	UBS	Y	Gain Control, Stereo EQ
Network Modules		NexSys Control	Twisted Pair Data Bus Connection		Computer Sequential Turn-On/Off Control
NC-NXS		Y		Y	Y
Power/Output Modules		NexSys-Compatible	STO Connection	Self-powered	Advanced NexSys functions
CC-SDC		N	4P	N	
CC-SIO		N	6P	Y	
CC-STL		N	4P	N	
NC-SAC		Y	6P	Y	Voltage/Current Monitor
NC-SLM		Y	6P	Y	Volt./Curr. & Load Monitor, Audio Return
NC-STI		Y	6P	Y	
A-AES/EBU B-Barrier Strip 4P-Four Pin 6P-Six Pin					
BS-Balanced, Stereo UBS=Unbalanced, Stereo MXO=Unbalanced Mono Crossover SXO-Unbalanced Stereo Crossover					



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